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Absolute Value Worksheets Answer Key PDF

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Part 1: Building a Foundation

What is the absolute value of -7?

undefined. -7

undefined. 0

undefined. 7 ✓

undefined. -14

The absolute value of -7 is 7.

Which of the following statements about absolute value are true? (Select all that apply)

undefined. The absolute value of a number is always positive. ✓

undefined. The absolute value of zero is zero. ✓

undefined. Absolute value measures the distance from zero on a number line. ✓

undefined. Absolute value can be negative.

The true statements are that absolute value is always positive, the absolute value of zero is zero, and it measures distance from zero.

Explain in your own words what the absolute value of a number represents.

The absolute value represents the distance of a number from zero, regardless of direction.

Provide the absolute values for the following numbers:

1. a) -15

15

2. b) 8

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8

3. c) 0

0

The absolute values are 15, 8, and 0 respectively.

Part 2: comprehension and Application

Which of the following equations correctly represents the absolute value equation |x| = 5?

undefined. x = 5 or x = -5 ✓

undefined. x = 5

undefined. x = -5

undefined. x = 0

The correct representation is x = 5 or x = -5.

If |x| < 3, which of the following could be the value of x? (Select all that apply)

undefined. -4

undefined. 2 ✓

undefined. 0 ✓

undefined. -2 ✓

The possible values of x are -2, 0, and 2.

Describe how you would graph the solution to the inequality |x| > 4 on a number line.

You would graph two open circles at -4 and 4, shading the regions to the left of -4 and to the right of 4.

Solve the equation |2x - 3| = 7. What is one possible value of x?

undefined. 5 ✓

undefined. -2

undefined. 2

undefined. 3

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One possible value of x is 5.

Which of the following represent solutions to the inequality |x + 1| ≤ 4? (Select all that apply)

undefined. 3 ✓

undefined. -5 ✓

undefined. 0 ✓

undefined. -2 ✓

The solutions are x = 3, x = -5, x = 0, and x = -2.

Solve the absolute value equation |3x + 2| = 8 and provide both solutions.

The solutions are x = 2 and x = - rac{10}{3}.

Part 3: Analysis, Evaluation, and Creation

Consider the function f(x) = |x - 2|. What is the value of f(x) when x = -1?

undefined. 1

undefined. 3 ✓

undefined. -1

undefined. 2

The value of f(-1) is 3.

Which of the following inequalities describe the solution set for |x - 4| > 6? (Select all that apply)

undefined. x > 10 ✓

undefined. x < -2 ✓

undefined. x < 10

undefined. x > -2

The inequalities are x > 10 and x < -2.

Analyze the inequality |2x + 5| < 9 and describe the solution set in interval notation.

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The solution set in interval notation is (-7, 4).

If the absolute value equation |x - 3| = |x + 2| is true, what can be concluded about x?

undefined. x = 0

undefined. x = 1

undefined. x = -0.5 ✓

undefined. x = -2.5

The conclusion is that x = -0.5.

Which of the following real-world scenarios can be modeled using absolute value? (Select all that apply)

undefined. Calculating the distance between two points on a map. ✓

undefined. Determining the deviation from a target temperature. ✓

undefined. Finding the sum of two numbers.

undefined. Measuring the height of a building.

The scenarios are calculating distance between two points, and determining deviation from a target temperature.

Create a real-world problem that involves solving an absolute value equation or inequality. Provide a detailed explanation of how to solve it.

The problem could involve a distance from a point, and the solution would involve setting up the absolute value equation.

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